

NOTES ON SAPINDACEAE, V

S.T. Reynolds

Queensland Herbarium, Meiers Road, Indooroopilly, Qld 4068

Summary

Two new species of *Diploglottis*, *D. berniana* and *D. obovata* and a new *Alectryon*, *A. ramiflorus* are described with notes on their distribution and relationship to the other species that occur in Australia. *Heterodendrum* Desf. is reduced to *Alectryon* Gaertn. and the new combinations *Alectryon diversifolius*, *A. tropicum*, *A. pubescens* and *A. oleifolius*, based on *Heterodendrum diversifolium* F.Muell., *H. tropicum* S.Reyn., *H. pubescens* S.Reyn. and *H. oleifolium* Desf., are made. Two new subspecies of *A. oleifolius*, subsp. *canescens* and subsp. *elongatus*, are described. *Alectryon semicinereus* (F.Muell.) Radlk. is removed from synonymy under *A. coriaceus* (Benth.) Radlk.

Contents

<i>Diploglottis</i> J.D.Hook.	328
<i>Alectryon</i> Gaertn.	332

Since publication of the reviews of *Diploglottis* J.D.Hook. (Reynolds 1981) and *Heterodendrum* Desf. and *Alectryon* Gaertn. (Reynolds 1983) and the account of Sapindaceae (Reynolds 1985), many more collections, some with better flowers or fruits, have become available. It is now possible to describe new species, amend some descriptions and keys, and reassess some generic and intraspecific distinctions.

DIPLOGLOTTIS J.D.Hook.

Diploglottis berniana S.Reyn., sp. nov. *D. cunninghamii* (Hook.) J.D.Hook. primo aspectu maxime simile quoad foliis et foliolis grandis sed ab ea differt essentialiter fructibus persaepe duplo majoribus, valvis crassioribus, floribus majusculus quinquepetalus. **Typus:** Cooper Creek, Parish of Alexandra, 16°10'S, 145°25'E, 24 Sep 1985, *B.Gray* 4159 (holo: BRI; iso: QRS); Portion 188, Parish of Alexandra, Palm Road, 17°11'S, 145°25'E, 27 Nov 1984, *B.Gray* 3730 (para: BRI; isopara: QRS) [this is a fruiting specimen.].

Trees to 20 m tall, to 20 cm girth; trunk fluted, buttressed. Young parts (especially young leaves), branchlets, leaf axes and peduncles red brown velutinous with pale or brown dense spreading hairs. Branchlets stout, fluted, 2-3 cm diameter at apex. Leaves (with petiole) 69-82(-90.5) cm long with 4 or 5 leaflets on each side of rachis. Petiole 12-20 cm long, subterete, broad and trisulcate at base. Rachis 34-48.5 cm long. Pinnae oblong or obovate-oblong or subelliptic (lowermost pair broadly obovate), apex truncate, rounded, obtuse or emarginate, margins slightly recurved, base truncate unequal, (9.5-)21-28(-32) cm × 7.5-15(-18) cm (juvenile leaflets 37 cm × 15 cm), shiny above, coriaceous, glabrous above except pubescent midrib, softly and sparsely villous below especially on nerves, midrib broad, densely villous; lateral nerves 18-25 pairs, patent, usually bullate between nerves, reticulation prominent. Petiolule 5-12(-15) mm long, pulvinate. Panicles 50-53 cm long, to 30 cm wide, cymes 2- or 3-flowered; bracts 3-10 mm × 1-8 mm, ovate, rusty brown velvety. Flowers 7-8 mm diameter; pedicel 3-5 mm long. Calyces 5 mm × 8 mm, lobes ovate, 4-5 mm × 3-4 mm, tomentose. Petals 5, one slightly reduced, 3-4.5 mm × 2-3 mm, obovate, shortly clawed; scales densely woolly, hiding small fleshy crests. Disc incomplete, glabrous. Filaments 2-6.5 mm long, subulate, densely villous from middle to base. Ovary villous, style stout, 3 mm long. Fruit transversely ellipsoid with 2 divaricate lobes and aborted third lobe or subglobose and 1-lobed, slightly compressed at sutures, yellow, 3-3.5 cm × 3.2-4.2 cm; valves thick, fleshy, 8 mm thick, densely rusty pubescent outside, sparsely villous inside. Seed brown, 1.3 cm × 2.2 cm, smooth, ± laterally compressed; aril orange, nearly covering seed. **Fig. 1.**

Specimens examined. Queensland. COOK DISTRICT: T.R. 146 Tableland L.A., 15°43'S, 145°16'E, near Mt Amos, Sep 1980, *Hyland* 10574 (BRI); Alexandra Creek, 16°04'S, 145°21'E, *Webb & Tracey* 12180 (BRI); Cooper Ck, Parish of Alexandra, 16°10'S, 145°25'E, Sep 1984, *Gray* 4159 (BRI, QRS); portion 188, Parish of Alexandra, Palm

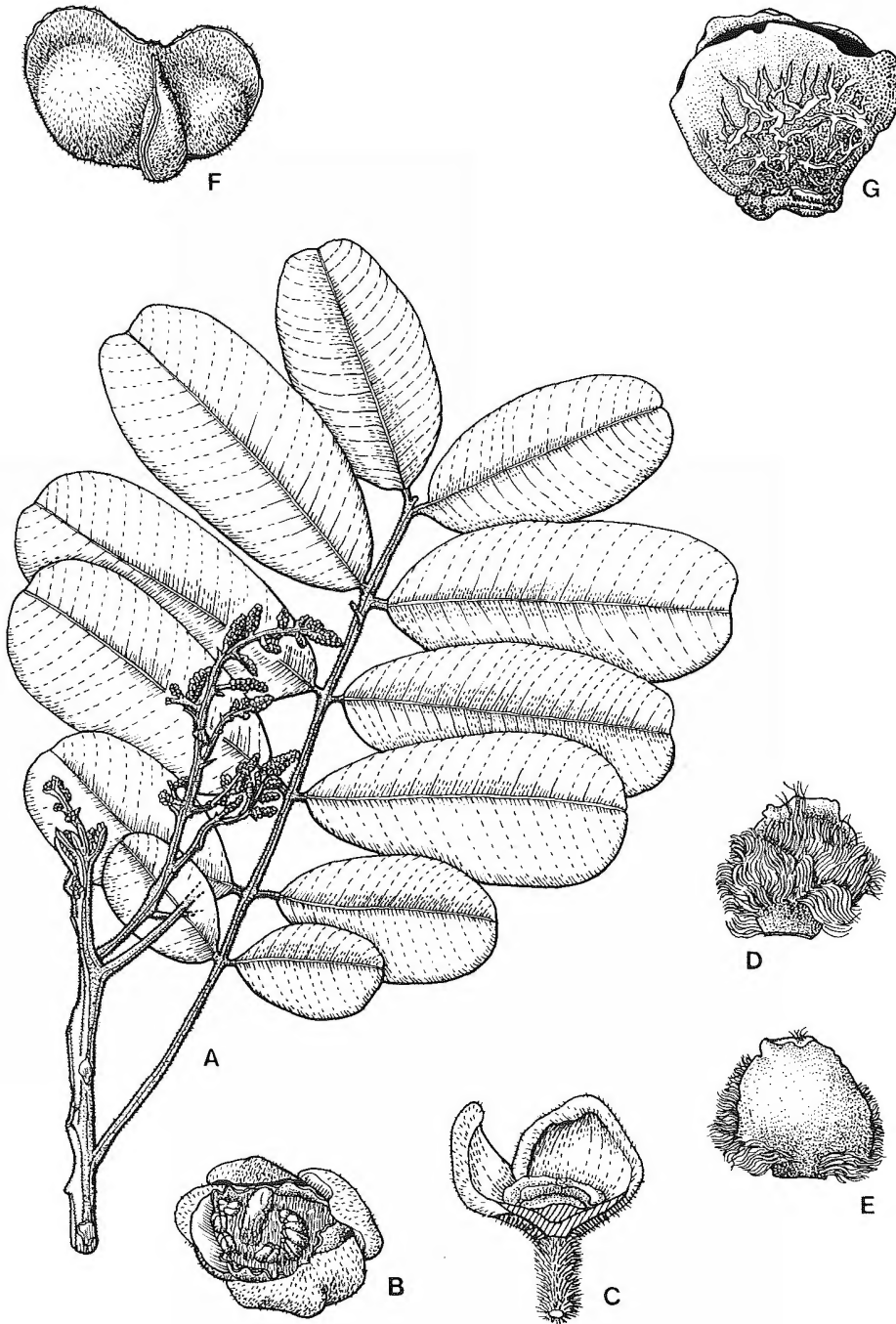


Fig. 1. *Diploglottis berniana*: A. habit with buds (Hyland 10574) $\times 1/5$. B. female flower (Gray 4159) $\times 4$. C. part of flower with petals and stamens removed to show calyx lobes and disc (Gray 4159) $\times 4$. D. front of petal showing hairy scales (Gray 4159) $\times 8$. E. back of petal (Gray 4159) $\times 8$. F. fruit (Gray 3730) $\times 1$. G. seed with aril (Gray 3730) $\times 2$.

Road, 17°11'S, 145°25'E, Nov 1984, *Gray* 3730 (BRI, QRS); S.F.R. 755 Barong L.A., 17°31'S, 145°50'E, near Russell River, Jul 1975, *Hyland* 3241 (BRI), Oct 1976, *Hyland* 9158 (BRI), Jul 1978, *Hyland* 3692 (BRI). [L.A. = Logging Area; S.F.R. = State Forest Reserve; T.R. = Timber Reserve]

Distribution and Habitat: North Queensland, from north of Rossville to Atherton Tableland, in rainforests, between 80 and 600 m altitude.

Affinities: The new species is at first sight similar to *D. cunninghamii* (Hook.) J.D. Hook. It has the large leaves and leaflets of *D. cunninghamii* but differs essentially in the large fruits with thick fleshy valves and larger flowers with five petals.

Etymology: The species is named in honour of Mr Bernie Hyland, CSIRO, Atherton, who first discovered the plant.

Diploglottis obovata S.Reyn., **sp. nov.** *D. diphyllostegia* (F.Muell.) Bailey aemulans differt essentialiter foliis 2- vel 3-jugis apicibus obtusis vel subrotundatis, nervis lateralibus numerosis inter se 4-7 mm distantibus. **Typus:** Queensland, NORTH KENNEDY DISTRICT: Dryander Creek about 2 km N of Gregory and about 20 km N of Proserpine, 10 Nov 1985, *P. Sharpe* 4169 (holo: BRI; iso: BRI).

Misapplied Name: *D. diphyllostegia* (F.Muell.) Bailey, in *Austrobaileya* 1(4): 397 (1981) quoad collections from Proserpine, Mackay and Bee Creek.

Small to medium sized spreading trees. Young parts, branchlets and leaf axes densely tomentose and finely villous with shiny \pm crispate pale to brown-rusty hairs; young leaves sericeous. Branchlets slender, about 3 mm diameter at apex, lenticellate. Leaves (with petiole) 12-20(-25) cm long with 2 or 3 leaflets on each side of rachis. Petiole 2-4(-5.5) cm long. Rachis 1.5-7(-8.5) cm long. Pinnae obovate, elliptic to obovate-elliptic, apex obtuse or \pm rounded, or truncate, base cuneate or obtuse, oblique, 5.5-12(-16.5) cm \times 2.8-7 cm, glabrous above, finely puberulent below, midrib and nerves (below) finely pubescent, thinly coriaceous; lateral nerves 12-20 pairs, oblique, 4-7 mm apart (rarely more), parallel. Petiolule 3-7(-10) mm long. Panicles laxly branched, 7.5-19 cm long, to 10 cm wide, peduncles pale crispate tomentose, cymules 3-flowered; bracts 2.5 mm \times 1 mm, brown velvety. Flowers 4-5 mm diameter, male and female on same inflorescence; pedicel 2-3 mm long. Calyces 3.5 mm \times 4.5 mm, finely pale crispate tomentose outside, lobes 2-3 mm \times 1-1.5 mm. Petals 5, one slightly reduced, 2.5-3 mm \times 2 mm, obovate, claw short; scales longer than petal, densely woolly, mostly all crested. Disc incomplete. Stamens 8, filaments 3-4.5 mm long, pilose towards base. Fruit as in *D. diphyllostegia*, 1.4-1.6 cm \times 1.4-3 cm, valves thin, finely pubescent outside, densely or sparsely hairy inside with long appressed pale hairs. **Fig. 2.**

Specimens examined (all BRI). Queensland. NORTH KENNEDY DISTRICT: Dryander Ck 4 km ESE of Mt Dryander, Jan 1986, *Guymer* 2007; Dryander Ck about 2 km N of Gregory and about 20 km N of Proserpine, Nov 1985, *Sharpe* 4169; Strathdickie near Proserpine, Oct 1936, *McPherson* 90; Impulse Creek, Conway Range, Nov 1985, *Sharpe* 4068; Kelsey Ck near Proserpine, *Michael* 1134. SOUTH KENNEDY DISTRICT: Cathu S.F., Nov 1981, *Young* 429; Eungella Ra. via Mackay, Oct 1922, *Francis*; 29 km W of Mackay, Nov 1976, *Turner*. LEICHHARDT DISTRICT: Bee Creek, *Clemens* BRI 161710.

Distribution and Habitat: Queensland, Proserpine to Bee Creek SW of Sarina; usually on creek banks in notophyll vine forests.

Affinities: The new species is closely related to *D. diphyllostegia* (F.Muell.) Bailey under which it was included as an obtuse-leaved form (Reynolds 1981, pp. 397-398). It has the same characteristic flowers, fruits, leaf texture and colour of indumentum as *D. diphyllostegia* but differs essentially in the 2- or 3-paired leaflets, obtuse or subrotundate apices, oblique parallel lateral nerves close to each other, and finer, shorter hairs on the branchlets.

D. diphyllostegia (F.Muell.) Bailey has generally larger leaves, 16-43(-70) cm long with 3-6(-9) leaflets on each side of rachis; petiole 7-10 cm long; rachis 6.5-17(-26 in juvenile) cm long; pinnae elliptic oblong or subobovate, apex acute or acuminate (usually abruptly shortly acuminate) or obtuse, base subacute or obtuse, oblique, pubescent or puberulent below, 11.5-18.5(-23) cm \times 4-7.5 cm, lateral nerves 10-14 pairs, (4-)7-15 mm apart; petiolule (2-)3-5 mm long. Panicles 15-29 cm long and as wide. *D. diphyllostegia* occurs in Queensland from Cape York Peninsula to near Ingham, usually on creek or river banks in mesophyll rainforest, and in Papua New Guinea.

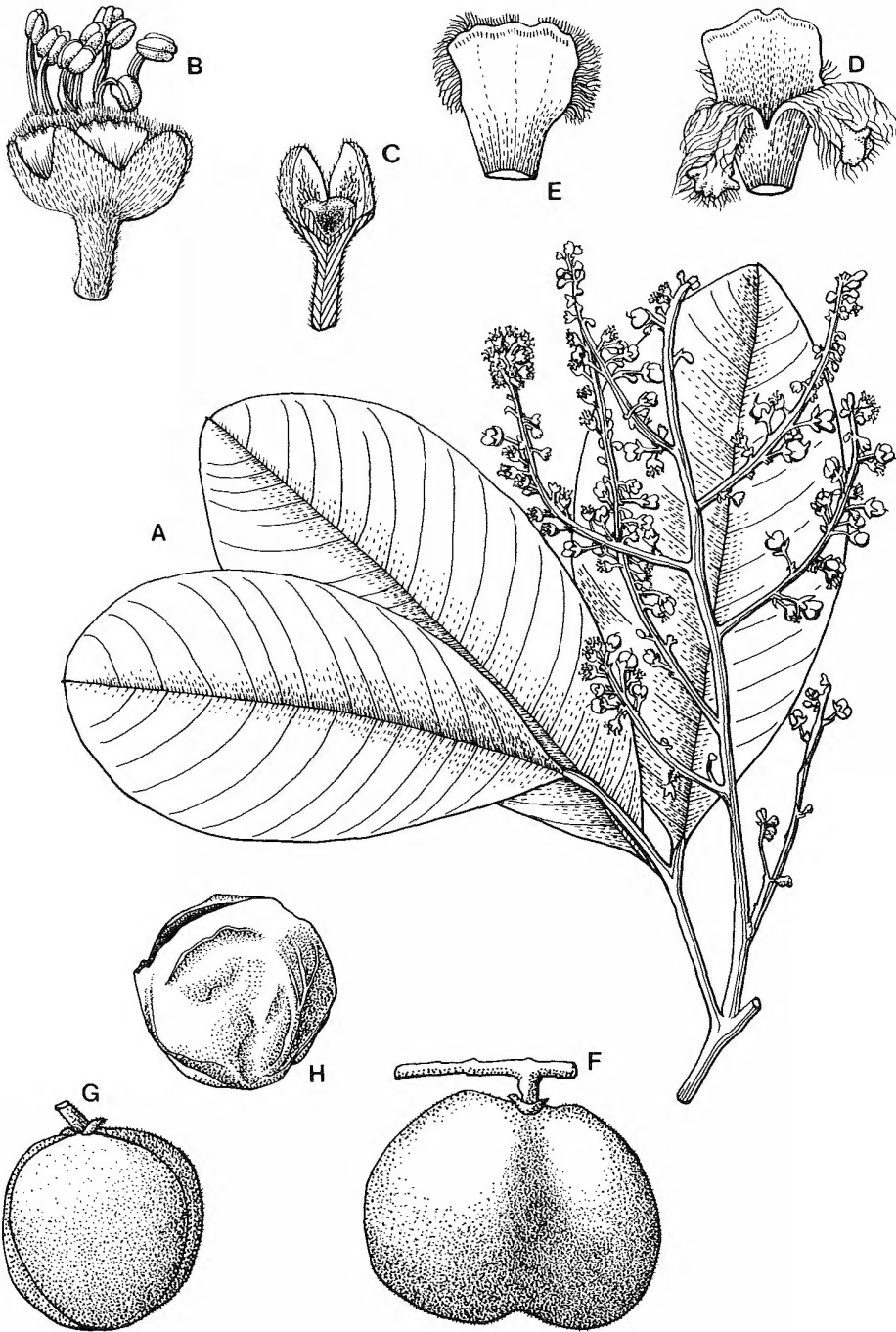


Fig. 2. *Diploglottis obovata*: A. habit with flowers (Young 429) $\times 3/4$. B. male flower (Young 429) $\times 6$. C. Calyx lobes (Young 429) $\times 6$. D. front of petal showing scales and crests (Young 429) $\times 12$. E. back of petal (Young 429) $\times 12$. F & G. fruits (Michael BRI 161706) $\times 2$. H. seed with aril (Michael BRI 161706) $\times 2$.

In the key to the species of *Diploglottis* (Reynolds 1983, p. 391) couplets 6 and 7 must be replaced by the following:

6. Leaf rachis 10–48.5(–71) cm long. Petiole (5–)8–17(–27) cm long. Leaflets 9–33(–51) cm × 5–15(–18) cm, rarely smaller. Petiolule (2–)7–35 mm long 7
- Leaf rachis 1.5–17(–26) cm long. Petiole 2–8(–10) cm long. Leaflets 5.5–18.5(–23) cm × 2.8–7.5 cm. Petiolule 2–7(–10) mm long 9
7. Petiolule (7–)11–35 mm long. Inflorescence unbranched, arrow. Flowers 7–8 mm diameter. Leaflets obtuse or abruptly acuminate. Shrubs or small trees to 4 m, unbranched **D. macrantha**
(Cape York Peninsula, Qld)
- Petiolule 2–12(–15) mm long. Inflorescence branched, usually nearly as wide as long. Flowers 4–8 mm diameter. Leaflets usually broad, obtuse or truncate at apex. Trees to 35 m, branched 8
8. Fruit thin-walled, 1.3–1.8 cm × 2.5–3 cm. Petals 4, rarely with reduced 5th one. Flowers 4–6 mm diameter. Rachis 10–35(–71) cm long. Petiole 5–11 cm long. Basal leaflets oblong to oblong-obovate **D. cunninghamii**
(S.E. Qld & N.S.W.)
- Fruit thick-walled, 3–3.5 cm × 3.2–4.2 cm. Petals 5. Flowers 7–8 mm diameter. Rachis 34–48.5 cm long. Petiole 12–20 cm long. Basal leaflets broadly obovate **D. berniana**
(N. Qld)
9. Leaflets 3–5-paired, acuminate, acute or obtuse; lateral nerves not close together (to 15 mm apart). Rachis 6.5–17(–26) cm long. Branchlets densely hairy, with long usually coarse spreading hairs and pale tomentum **D. diphylostegia**
(N. Qld & New Guinea)
- Leaflets 2–3-paired, obtuse or subrotundate at apex; lateral nerves close together (usually less than 7 mm apart). Rachis 1.5–3.2 cm long. Branchlets finely tomentose with crispate, appressed and spreading hairs **D. obovata**
(Proserpine to Eungella, Qld)

ALECTRYON Gaertn.

Alectryon ramiflorus S.Reyn., **sp. nov.** a speciebus ceteris Australiensis foliolatis parvioribus angustis pluribus (plerumque 6–9 paribus) polymorphis in juvenalis praecipue differt, et inflorescentiis ramifloris fructuosis. **Typus:** Queensland, Wide Bay District: Cordalba State Forest, south of Bundaberg, 27 Jan 1986, *K.D.Sarnadsky & E.E.Zillmann* 351 [fruiting specimen] (holo: BRI; iso: BRI).

Tree to 7 m, older branches with numerous prominent ellipsoid lenticels. Young branches and leaf axes with scattered ascending appressed or spreading pale brown hairs. Leaves polymorphic, with (2–)6–9 leaflets on each side of rachis (12–19 in juvenile leaves). Petiole (1–)2.5–4.5 cm long, subterete, shortly pulvinate. Rachis 3–12.5 cm long (19 cm in juveniles) adaxially ridged, usually slightly margined. Leaflets polymorphic, subopposite or alternate, variable, usually narrowly elliptic or subovate, apex truncate or obtuse, retuse, margins entire or with few lobes, base acute or abruptly attenuate and decurrent into petiolules, oblique, 2.2–6.7 cm × 0.6–1.5 cm, thinly coriaceous, pale green and ± shiny above, yellow green below, glabrous or with few hairs on midrib and towards the base below; midrib ridged above, lateral nerves and reticulation prominent, fine, lateral nerves 8–12 pairs subpatent. Petiolule 2–7 mm long. (Juvenile leaflets with lobes or pinnately divided into fine narrow leaflets, leaves bipinnate in adventitious shoots.)



Fig. 3. *Aletryon ramiflorus*: A. habit with fruits (Sarnadsky & Zillmann 351) $\times 3/4$. B. fruit $\times 4$. C. seed with aril $\times 4$.

Inflorescences clustered on branches on short brachyblast-like structures sometimes intermingled with young shoots, usually 2-4(-7) per cluster, paniculiform with few lax branches, usually branching from the base, 9-13 cm long and as wide, secondary and tertiary peduncles slender, puberulent. Flowers 3-3.5 mm diameter; pedicels 1.5-2 mm long. Calyces broadly cupular, 2 mm × 3-3.5 mm, lobes small, ovate, 0.7 mm × 1 mm, puberulent. Petals absent. Disc fleshy, crenulate. Stamens 6-8, filaments 1 mm long, glabrous, anthers 2 mm long. Ovary (1-)2-lobed. Fruit green, small, usually borne in a dense mass, (1-)2-lobed, broadly and transversely ellipsoid with 2 globose or ellipsoid turgid lobes slightly compressed at apex, 5-6 mm × 9 mm, if 1-lobed then subglobose or ellipsoid and 7 mm × 4 mm; pericarp thinly fleshy, drying ± crustaceous, glabrescent or glabrous outside. Seeds brownish, half enclosed in red granular cupular aril; stalk 5 mm long, slender. **Fig. 3.**

Specimens examined. Queensland, WIDE BAY DISTRICT: Cordalba, April 1982, *Sarnadsky* 168 (BRI); Cordalba State Forest, south of Bundaberg, Jan 1986, *Sarnadsky & Zillmann* 351 (BRI), Dec 1986, *Zillmann* (BRI) [flowering specimen].

Distribution and Habitat: Known only from type locality in southern Queensland. Rare, growing in a small population of about 20 specimens in remnant scrubs.

Affinities: A very distinctive species differing from all the other species of *Alectryon* known from Australia by the inflorescences clustered on old branches and the very variable and polymorphic leaves and leaflets especially in juvenile and adventitious shoots. Leaflets are also smaller, narrower and greater in number (usually 6-9 pairs) than in other species.

Note: The mass of fruit on the branches was said to be so dense that it obscured about a 60 cm long portion of each branch. The wood is reported to be suitable for turning.

Alectryon Gaertn. and *Heterodendrum* Desf.

The finding of *A. ramiflorus* S.Reyn. has necessitated a reassessment of the variability and relationships of *Alectryon* Gaertn. and *Heterodendrum* Desf. In the past they have been separated on their leaf character, pinnate in *Alectryon* and simple in *Heterodendrum*. Apart from this they are hardly distinguishable, having similar flowers and fruits, seeds and arils. For example, fruits of *H. oleifolium* Desf. resemble those of *A. coriaceus* (Benth.) Radlk. and *A. repando-dentatus* Radlk., while those of *H. pubescens* S.Reyn. are hardly distinguishable from those of *A. subdentatus* (F.Muell. ex Benth.) Radlk. *H. pubescens* closely resembles *H. diversifolium* F.Muell. in having entire or lobed leaves. Both can have leaves lobed or entire in the upper part and pinnate at the base. In this character they resemble *A. subdentatus* to such an extent that *A. subdentatus* has sometimes been thought to be an abnormal form or a hybrid with *H. pubescens*. Dr P.W. Leenhouts, Leiden, who is currently working on *Alectryon* suggested (in litt.) the transfer of *H. pubescens* to *Alectryon*. However it is closely related to *H. diversifolium* and has the inflorescence of *Heterodendrum*.

The small fruits and the shape and lobing of the leaves of *A. ramiflorus* resemble those of species of *Heterodendrum*. In this species leaflets of the same leaf can be entire, lobed or pinnate and on adventitious shoots the leaves are bipinnate with fine narrow leaflets, a condition not before seen in Australian Sapindaceae. Most species in this family develop simple leaves first (seedling stage), then lobed leaves (usually in juveniles), and finally pinnate leaves, for example, *Atalaya*, *Diploglottis* and *Harpullia*. Species of some genera, for example, *Atalaya* and *Dodonaea* have either simple or pinnate leaves. Leaves of *Atalaya variifolia* F.Muell. ex Benth. can be simple, lobed or pinnate, sometimes on a single branch. Because of the variability of the leaves of *Alectryon* and *Heterodendrum*, the occurrence of simple lobed and pinnate leaves in species of other genera of Sapindaceae, and the lack of other distinguishing characters, the two genera are combined here under the earlier name, *Alectryon*.

The distribution of *Alectryon*, including *Heterodendrum* is similar to some other genera such as *Flindersia*. Species of *Alectryon* as formerly defined are mostly found in rainforests while those of *Heterodendrum* are found in drier areas, for example, in brigalow communities. *H. oleifolium* extends to the margins of deserts.

New combinations for species previously under *Heterodendrum*1. *Alectryon diversifolius* (F.Muell.) S.Reyn., **comb. nov.**

Heterodendrum diversifolium F.Muell., *Fragm.* 1: 46 (1858). **Type:** subtropical and tropical eastern Australia, Brigalow scrubs, *collector unknown* (not seen).

2. *Alectryon tropicus* (S.Reyn.) S.Reyn., **comb. nov.**

Heterodendrum tropicum S.Reyn., *Austrobaileya* 1: 484 (1983). **Type:** COOK DISTRICT: Mungana, 16 Jun 1946, *H.Flecker* N.Q.N.C. No 10423 (BRI: holo).

3. *Alectryon pubescens* (S.Reyn.) S.Reyn., **comb. nov.**

Heterodendrum pubescens S.Reyn., *Austrobaileya* 1: 485 (1983). **Type:** BURNETT DISTRICT: Eidsvold, Sep 1915, *Dr T.L.Bancroft* (BRI: holo).

4. *Alectryon oleifolius* (Desf.) S.Reyn. **comb. nov.**

Heterodendrum oleifolium Desf., *Mem. Mus. Hist. Nat.* 4: 8.t.3 (1818). **Type:** Western Australia, probably Shark Bay area, *Baudin expedition* (? iso: fragments and negatives NSW, photo BRI).

The variability of *Alectryon oleifolius* (Desf.) S.Reyn.

Alectryon oleifolius (Desf.) S.Reyn. is a very variable and complex species with two other species reduced under it, namely *H. macrocalyx* Radlk. and *H. microcalyx* Radlk. These were previously treated as varieties (Reynolds 1983, 1985). Recent numerous additions to collections of this widespread species have necessitated the reassessment of this complex. It was found that differences between the three varieties were far greater than thought previously. Three quite distinct entities can now be segregated morphologically and supported to a certain extent by ecological and distributional differences. The entities only connect with each other through a small proportion of specimens with somewhat intermediate characters. As these entities are not specifically distinct, as Radlkofer (1879) had thought, and there is also a slight overlap in ecology and distribution, the varieties are here raised to subspecific rank. Necessary new combinations are made and the key in Reynolds 1983, p.483 is amended as indicated below. Some variation does occur in the subspecies and further collections may prove them to be distinct varieties but varietal status is not warranted at the present time.

The epithets '*macrocalyx*' and '*microcalyx*' have been discounted in the choice of subspecific epithets as the size of the calyx varies in the same subspecies. Indumentum, leaf and inflorescence characters and the length of pedicels are used to separate the subspecies.

1. Leaves 1.2–2.7 cm wide, rarely less; length: breadth ratio 2.3–5(–6):1; lamina obovate or elliptic, obtuse truncate, retuse or subacute. Fruits hairy 2
- Leaves less than 1 cm wide; length:breadth ratio 7–20(–31):1; lamina usually long and slender, narrowly elliptic or subobovate, acute, acuminate or obtuse. Fruits hairy or glabrous 3
2. Leaves and branches rigid, canescent or glabrous. Cymules sessile or subsessile, flowers on stout pedicels 1–2(–4) mm long. Flowers red. Aril orange subsp. **oleifolius**
- Leaves and branches usually drooping, canescent. Cymules and flowers on slender stalks 3–14 mm long. Flowers greenish or yellowish. Aril red subsp. **canescens**

3. Fruit, calyx and leaves usually densely hairy. Leaves narrowly elliptic or subobovate, length:breadth ratio 7.5-10.6(-12):1. Inflorescences 1-13-flowered, of cymes, racemes or panicles. Flowers to 6 mm wide; pedicels (3-)6-14 mm long subsp. **canescens**

Fruit, calyx and leaves usually glabrous. Leaves usually slender and long, length:breadth ratio 7-20(-31):1. Inflorescences to 53- or more-flowered, usually panicles. Flowers 2.5-4 mm wide; pedicels 1.5-4(-6) mm long subsp. **elongatus**

Alectryon oleifolius (Desf.) S.Reyn. subsp. **oleifolius** stat.nov.

Heterodendrum oleifolium Desf., Mem. Mus. Hist. Nat. 4: 8.t.3 (1818). **Type:** Western Australia, probably Shark Bay area, *Baudin expedition* (iso: fragments and negatives NSW, photo BRI).

H. oleifolium var. *oleifolium* S.Reyn., *Austrobaileya* 1: 483 (1983).

H. oleifolium var. *euryphyllum* Domin, *Biblioth. Bot.* 89: 348 (1927). **Type:** Hamersley Range near Nichol Bay, W.A., *F. Gregory's Exped.* (not seen).

Shrubs or small trees to 3 m high, 5 m wide, sometimes spinescent. Leaves glaucous or green, truncate, retuse or obtuse, 3.5-8(-10.5) cm × 0.7-2.7 cm. Petiole 4-10 mm long. Inflorescence racemiform or with racemiform branches. Calyx 3-6 mm wide, entire or subentire. Fruit 2- or 3-knob-lobed, to 2.2 cm diameter.

Distribution and Habitat: Western Australia. North West District: Hamersley Range to Tamala Station near Shark Bay; on red sand hills or grey sandy clay. **Map 1.**

Common name: Minga tree.

Notes and Observations: The stiff leaves and inflorescence with subsessile or sessile cymules and red flowers on stout ± patent pedicels distinguish this subspecies.



Maps 1-3. 1. *Alectryon oleifolius* subsp. *oleifolius*. 2. *A. oleifolius* subsp. *canescens*. 3. *A. oleifolius* subsp. *elongatus*.

Alectryon oleifolius (Desf.) S.Reyn. subsp. **canescens** S.Reyn., **subsp. nov.**

Heterodendrum macrocalyx Radlk., Act. Congr. Bot. Amsterdam 119 (1877); = Sapind. Holl.-Ind. 49 (1879). **Type:** Murray River, *collector unknown* (syn: not seen); between Ooldea and Charlotte Waters, *collector unknown* (syn: not seen).

H. oleifolium Desf. var. *macrocalyx* (Radlk.) Domin, Biblioth. Bot. 89: 348 (1927).

Shrubs or small trees to 6 m; branchlets, leaves and inflorescences densely white hairy. Leaves sericeous when young, obovate or elliptic, 5-8.5(-10) cm × 0.4-1.6(-2.2) cm, obtuse, acute or subacute mucronate; petiole 2-16 mm long. Flowers solitary or in a few 3-9(-13)-flowered cymes, racemes or panicles. Calyx usually 4-6 mm wide, subentire. Fruit (1-)2- or 3-lobed, densely hairy, 1.2-2.5 cm diameter.

Distribution and Habitat: Common form in inland regions of Western Australia, South Australia, north-western New South Wales, Victoria and western Queensland; on sand dunes, sandy ridges and hills, and creekbanks. **Map 2.**

Common name: Bullock Bush, Black Apple Bush, Dogwood, Rosewood, Cabbage Bush.

Aboriginal name: Mindra.

Etymology: The subspecific epithet refers to the canescent look of the plants.

Notes and Observations: This subspecies differs from the typical one in the pedicels tending to be long and slender whereas in subsp. *oleifolius* they are short and stout. The leaves and tips of branches droop in this subspecies.

Alectryon oleifolius (Desf.) S.Reyn. subsp. **elongatus** S.Reyn., **subsp. nov.**

Heterodendrum microcalyx Radlk., Act. Congr. Bot. Amsterdam 119 (1877); = Sapind. Holl.-Ind. 49 (1879). **Type:** Flinders River, *collector unknown* (holo: MEL).

H. oleifolium var. *microcalyx* (Radlk.) Domin, Biblioth. Bot. 89: 348 (1927).

H. floribundum Pritzel in Fedde, Repert. 15: 358 (1918). **Type:** Central Australia, Hermannsburg at Finke River, *Strehlow* 43 (not seen).

Small trees to 13 m; tips of branches and leaves usually drooping. Branchlets, leaves and calyces puberulent or glabrous. Leaves light green, slender and long, narrowly elliptic, subfalcate, acute, acuminate or obtuse, (4-)5.7-15.5(-18) cm × 0.4-1(-1.8) cm; petiole 5-15 mm long. Inflorescence racemiform or densely flowered panicles, 5-53(-100)-flowered. Calyx 2.5-4 mm wide, subentire or laciniate. Fruit obcordate or didymous with divaricate lobes, 1.2-2.5 cm diameter, glabrous.

Distribution and Habitat: North-western Queensland, southern central Australia and to near Wyalong, New South Wales; in open forests usually on heavy soils. **Map 3.**

Common name: Boonaree, Australian Rosewood, Western Rosewood.

Etymology: The subspecific epithet refers to the slender long leaves.

Notes and Observations: This subspecies is distinctive in having glabrous fruits, green leaves and densely flowered inflorescences with small flowers.

Some collections from Northern Territory differ slightly in having wider leaves and very short dense inflorescence and laciniately lobed calyces. They were described as *H. floribundum* Pritzel, and have characters of both other subspecies. Further collections may prove it to be a distinct taxon, the collections seen so far are insufficient to form an opinion.

***Alectryon coriaceus* (Benth.) Radlk. and *A. semicinereus* (F.Muell.) Radlk.**

The status of these two closely related species which were combined in the review of *Alectryon* by Reynolds (1983) is here reassessed in view of recent collections and the two species are shown to be distinct.

When the genus was reviewed *A. semicinereus* was known from only one poor collection from north Queensland (*Volck* 1414) apart from the type and some cultivated specimens at QRS. It was not unlike some of the collections of *A. coriaceus* from south-

eastern Queensland so that it was thought to be an acute-leaved form of *A. coriaceus* and placed under that species. Both species have similar leaves, with greyish lower surfaces of leaflets, and the same indumentum, inflorescences, flowers and fruits.

Recent additions to the collections from north Queensland show that the leaves of these specimens are distinct from those from south-eastern Queensland. Since the two species also differ ecologically, *A. semicinereus* is now considered to be a species distinct from *A. coriaceus*.

The key to the species (Reynolds 1983, pp. 472–473) should be amended. Delete '*A. coriaceus*' from the first lead of Couplet 3 and substitute '3a'. Add the following Couplet 3a.

3a Leaflets 1-paired, rarely 2-paired, elliptic-oblong or obovate-oblong, broad, rounded or obtuse at both ends, 5.5–13.5 cm × 2.5–7.5 cm; lateral nerves 8–12 pairs. Petiolule short and stout, 3–5 mm long. ***A. coriaceus***

Leaflets 2- or 3-paired, rarely 1- or 4-paired, elliptic-oblong, narrowing and pointed at both ends, acute or acuminate, 9–19 cm × (4–)5.7–8.5 cm; lateral nerves 10–18 pairs. Petiolule slender, pulvinate, 6–17 mm long ***A. semicinereus***

Allectryon coriaceus (Benth.) Radlk., Act. Congr. Bot. Amsterdam 118 (1877), = Sapind. Holl.-Ind. 48 (1879).

Distribution and Habitat: Grows in sublittoral forests, on coastal sands from Maryborough, Queensland, to Port Stephens, New South Wales.

Allectryon semicinereus (F.Muell.) Radlk., Act. Congr. Bot. Amsterdam 118 (1877), = Sapind. Holl.-Ind. 48 (1879).

Distribution and Habitat: Grows in moist or subtropical rainforests in Queensland from the Atherton Tableland to Bulburin usually on basalt. Its distribution is as follows:

COOK DISTRICT: S.F. 191 [not S.F.R. 91 as labelled], Wongabel, S of Atherton, Jul 1959, *Volck* 1414 (BRI); S.F.R. 194, Parish of Barron, Carrington Rd, Jan 1985, *Gray* 3830 (QRS), Apr 1985, *Gray* 3996 (QRS); R. 1173, banks of the Barron River approx 1 km downstream from Atherton–Yungaburra bridge, Mar 1982, *Tracey* 14925 (QRS); Kirrama S.F. near Kennedy, Jan 1985, *Crowley* (QRS); S.F.R. 607, Parish of Dinden, Bridle L.A., May 1985, *Gray* 4034 (QRS). PORT CURTIS DISTRICT: Bulburin S.F. 67, Jul 1985, *McDonald* 4076 (BRI), May 1986, *Gibson* 804 (BRI). [S.F. = State Forest; S.F.R. = State Forest Reserve; R. = Reserve; L.A. = Logging Area]

Acknowledgements

This is the final of the series of the study in Australian Sapindaceae, the completion of which would not have been possible without the assistance I have received. I would like to acknowledge my thanks to Les Pedley for his guidance and for providing or checking the latin diagnoses. My thanks are also due to Dr Bob Johnson and Rod Henderson for their help and comments. I am grateful to Laurie Jessup, Bill McDonald, Gordon Guymer, Trevor Stanley, Norm Byrnes, Bernie Hyland, Geoff Tracey, Philip Sharpe, Jeny Calway, Bruce Gray, John Clarkson, Bob Jago, Andrew Graham, John Connors, Lloyd Bird and Aileen Wood for their comments or assistance, especially in providing essential specimens. I extend my thanks to the directors or keepers of the following herbaria for kindly loaning me their specimens for study, QRS, MEL, NSW, AD, PERTH, DNA, K, BM, A, L and PR.

This study has been based mainly on collections housed at BRI and QRS.

References

- RADLKOFER, L.A.T. (1879). Ueber die Sapindaceen Hollandisch-Indiens. Reprinted from Actes du Congrès International de Botanists, Amsterdam 1877: 70–133.
- REYNOLDS, S.T. (1981). Notes on Sapindaceae in Australia, I. *Austrobaileya* 1: 388–419.
- REYNOLDS, S.T. (1983). Notes on Sapindaceae in Australia, II. *Austrobaileya* 1: 472–496. '1982'.
- REYNOLDS, S.T. (1985). Sapindaceae (excluding *Dodonaea* & *Diplopeltis*). In A.S. George (ed.), Flora of Australia Vol. 25. Canberra: Australian Government Publishing Service.